

The legacy of Professor Adolf Lorenz, the “bloodless surgeon of Vienna”

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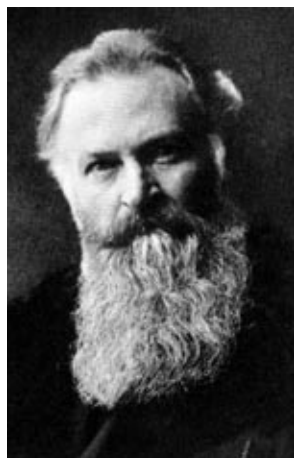


Figure 1. Dr. Lorenz at the peak of his career, age 48. Reprinted with permission from reference 1.

Dr. Adolf Lorenz (*Figure 1*), an internationally famous orthopaedic surgeon from Vienna, was the honored guest at the annual meeting of the American Medical Association held in New Orleans in 1903. This is the story of how Dr. Lorenz' subsequent visit to Dallas became the inspiration for the Texas Baptist Memorial Sanitarium, which developed into Baylor University Medical Center and Baylor Health Care System.

Texas was a frontier state in the early 1800s. In 1839, an Arkansas lawyer named John Neely Bryan (1810–1877), who could speak 3 Indian languages, traveled through the area that is now Dallas in hopes of developing a trading post on the Trinity River. He returned 2 years later to find that the Indians in that region had been relocated by the US government. Therefore, the concept of a trading post was not reasonable, but he liked the area and decided to settle. He joined with a few people who called themselves “Peters' Colony.” Most of these settlers came from Kentucky when they were each promised 640 acres of land to settle in North Texas. Bryan soon became the mayor of Peters' Colony and in 1845 named the community “Dallas” after the vice president of the USA at that time, George Mifflin Dallas.

The year 1845 also saw a surgical milestone when inhalation anesthesia was discovered by Wells and Morton. They demonstrated their discovery in the famous “Ether Dome” at Massachusetts General Hospital in Boston, using a mixture of nitrous oxide and ether, which put a patient to sleep and allowed surgery to be performed painlessly.

A second milestone in surgery—the beginning of antisepsis—occurred during that century. In 1869, Joseph Lister (1827–1912), professor of surgery at the University of Glasgow in Scotland, noted that there were very few flies and other signs of decomposition around a garbage dump outside of Glasgow where carbolic acid had been sprinkled on top of the waste. He then began to experiment with the use of carbolic acid to sterilize the medium in the operating room and to sterilize bandages. At that time, postoperative sepsis killed 40% to 50% of patients. Soon carbolic

acid spray became a common feature, and surgeons would also dip their hands into solutions of carbolic acid before operating. In 1877, Lister's theory gained acceptance when he successfully wired a broken patella without sepsis. This was one of the first instances in which a closed fracture was converted into an open one, and the patient did well.

A third major medical milestone occurred in 1895: the discovery of x-rays by William Conrad Roentgen. Roentgen accidentally discovered that rays emitted from his cathode ray generator (and called “X”-rays because they were unknown) could pass through soft tissues and demonstrate the underlying bones on a photographic plate. The first x-ray picture ever taken of a human was that of his wife's hand. For this discovery, Roentgen was awarded the Nobel Prize in Physics in 1901.

In 1850, the population of Dallas was 430, and by 1860 it was over 2000. By 1875, the population had soared to over 7000, boosted by the arrival of 2 railways linking Dallas to St. Louis and Chicago in the north and to Galveston in the south.

Dr. Charles McDaniel Rosser was one of the best and busiest physicians in Dallas in 1900 (*Figure 2*). He conscientiously worked to improve the health care of the citizens of Dallas and was subsequently made officer of health for the city. He was also appointed medical officer for the 2 railways. In 1900, Rosser started a medical school and called it the Medical Department of the University of Dallas. Staff and students combined numbered

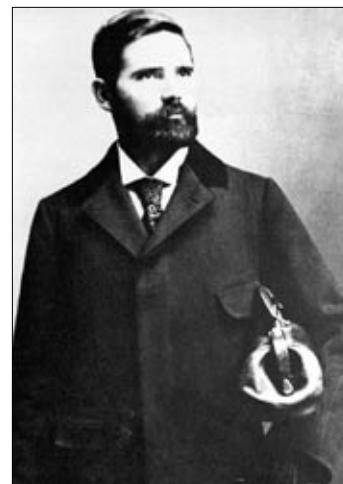


Figure 2. Dr. Charles McDaniel Rosser (1862–1945).

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Figure 3. Good Samaritan Hospital, 1902.



Figure 4. Dr. Edward H. Cary (1872–1953).

approximately 73, with 1 female student. Medicine was a popular profession at that time, possibly because it was cheaper to become a doctor than it was to become a farmer. A medical license cost \$15, whereas horses, plows, and land cost a great deal more. The training of doctors in the USA was commonly done in small medical schools such as the University of Dallas Medical Department, primarily with books and lectures but with minimal exposure to actual patients. Aspirin, the “wonder drug” at that time, competed with various

“tonics” that contained mainly alcohol. Ninety percent of the physicians had no college education, and fake licenses to practice medicine were not uncommon.

In 1902, with the financial help of some colleagues, Dr. Rosser purchased the 14-room home of Captain W. H. Gaston, which existed close to where Roberts Hospital of Baylor now stands. The old house, which was also known as “Hopkins’ Place,” was remodeled and used as a teaching hospital for Dr. Rosser’s medical college. There were 25 beds and 1 operating room in this building, and it was named the Good Samaritan Hospital (Figure 3).

Statistics show that in 1903 the average life expectancy in the nation was only 47 years, and 95% of births took place at home. The leading causes of death at that time were infections such as pneumonia, influenza, tuberculosis, and diarrhea, along with heart disease and stroke.

Many problems affected the musculoskeletal system at that time, and papers presented at the 1903 meeting of the American Orthopaedic Association, then in its sixth year of existence, covered topics such as tuberculosis of bones and joints, club feet, congenital dislocation of the hip, rickets, polio, osteomyelitis, and trauma. However, since life expectancy was only 47 years, degenerative arthritis was rarely diagnosed and never treated.

In 1903, the sanitary conditions in Dallas were terrible, infant mortality was high, and infectious diseases were rampant. The population of Dallas had grown to 43,000. There were 2 other small hospitals, Parkland and St. Paul’s Sanitarium, and neither

was connected to a sewage system. It was to improve these poor conditions that Dr. Rosser enacted public health ordinances.

Dr. Edward H. Cary, a colleague of Rosser and a graduate of New York’s Bellevue Hospital Medical School, became the second dean of the medical school in 1903 (Figure 4). At that time, Abraham Flexner had been commissioned by the American Medical Association to study the quality of medical education in the USA. The “Flexner Report” of 1910 recommended that all medical schools be affiliated with major universities and emphasized the need to close substandard schools. Dr. Cary, having trained in the Northeast and being aware of the advantages of having a medical school associated with a major university, negotiated an affiliation of the University of Dallas Medical Department with Baylor University in Waco. A charter was subsequently granted from the State of Texas on October 16, 1903, and the name of the medical school was changed to “Baylor University College of Medicine.” It was also in 1903, at the American Medical Association annual meeting in New Orleans, that Drs. Rosser and Cary first met Dr. Adolf Lorenz.

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Dr. Adolf Lorenz (1854–1946) was born in Vienna in 1854 to a very ordinary family. His father was a simple innkeeper and harness maker. A very bright young man, Lorenz was admitted to the medical school at the University of Vienna at age 20 (Figure 5). The “Vienna Schools of Medicine” were very prestigious, as the first college of medicine in the world had been established in Vienna in 1365, and by 1784 a large general teaching hospital was operational. Some of the significant physicians and surgeons that came from the Vienna Schools of Medicine included Ignaz Semmelweis (1818–1865), Theodor Billroth (1829–1894), and Sigmund Freud (1881–1938). As with other doctors of that era, Lorenz started growing a beard in medical school and proudly wore it throughout the rest of his life.

Adolf Lorenz graduated at the age of 26. He chose to become a surgeon and was assigned to the second department of surgery in Vienna as the first assistant to Professor Eduard Albert (1841–1900). Unfortunately, within 4 years, Lorenz developed a severe allergy to the carbolic acid that was routinely used in the operating rooms for asepsis; contact with the acid resulted in tremendous skin lesions on his hands. Consequently, he was unable to continue operating and became a “dry surgeon” as opposed to a “wet surgeon”—by treating patients without cutting the skin.

Lorenz developed a huge reputation for his manipulative treatment of club feet, which he accomplished by essentially stretching or breaking the tendons, ligaments, and epiphyseal plates until the foot was appropriately aligned. Once proper alignment was accomplished, he would apply a cast until the foot healed in that position (Figure 6). He was also involved with the treatment of scoliosis, using pulleys and traction to achieve a correction and then applying a cast to maintain the correction (Figure 7). However, he was



Figure 5. Dr. Adolf Lorenz at age 20. Reprinted with permission from reference 2.



Figure 6. Correction of club feet by the Lorenz method. Reprinted with permission from reference 1.

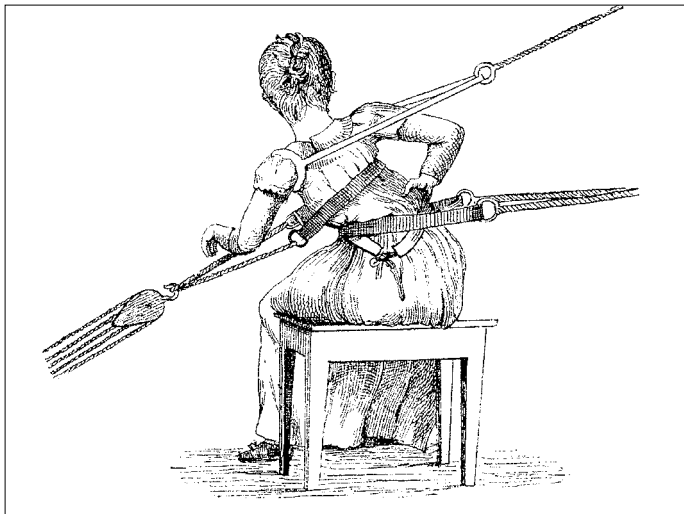


Figure 7. Scoliosis traction technique developed by Dr. Lorenz. Reprinted with permission from reference 2.

most famous for his treatment of congenital dislocation of the hip. He developed a technique for manipulating the hip in young children under light anesthesia, and holding them in a plaster spica cast in abduction and external rotation as they matured. He was also the first to add a walking frame to his abduction hip spica casts, so that the children could be somewhat mobile (*Figure 8*). Tuberculosis was very common in those days, and painful lesions of the spine or other joints were treated by plaster immobilization until the area fused spontaneously and the pain diminished. Lorenz was one of the founders of the German Society of Orthopaedic Surgery in 1901, and a year later at the age of 48 he was at the peak of his career and known as the “bloodless surgeon of Vienna.”



Figure 8. A child after correction of congenital dislocation of the hip using a hip spica cast and walking frame. Reprinted with permission from reference 2.



Figure 9. Dr. Lorenz conducting a clinic at Good Samaritan Hospital.

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The story shifts back to America, where Philip Armour, a wealthy meat-packing magnate in Chicago, was concerned about his 12-year-old daughter who had a congenital dislocation of the hip. One effort at surgical relocation of the hip had failed. Armour invited Lorenz to come to Chicago to treat his daughter. Lorenz was reluctant because of the age of the girl and the fact that a prior surgical effort had been made, which minimized his opportunity to get a successful reduction. Lorenz’ wife, however, convinced him to go while negotiating a huge (for that time) fee of \$30,000 (later rumored to be \$1 million).

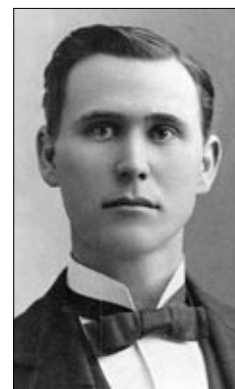


Figure 10. Rev. George W. Truett (1867–1944).

Consequently, in 1902, Lorenz traveled to Chicago and treated the girl by manipulating her hip and putting her in a plaster cast. This was associated with tremendous publicity, and he was promoted as one of the most distinguished surgeons of the world. He was subsequently invited to meet with President Theodore Roosevelt and other dignitaries of that time.

A year later (1903), Lorenz returned to the USA, primarily to follow up on his young patient in Chicago. Advance publicity of his return visit prompted an invitation from the American Medical Association to attend its annual meeting in New Orleans and to demonstrate his techniques. It was such a big event to have a world-renowned surgeon come to the USA at that time that Dr. Rosser and Dr. Cary went to New Orleans to see Lorenz and, if possible, to invite him to visit Dallas. Lorenz informed them that he was not sure that he could go to Dallas because he had a commitment to visit Mexico and to meet its president. However, he did arrive in Dallas on May 20, 1903, with the intention of staying only 2 days. News of his visit brought a huge number of sick and lame patients, who came from all over Texas to be seen and treated by the great man. Lorenz stayed a week and conducted 2 clinics each day at the Good Samaritan Hospital (*Figure 9*).

At the end of that week, a farewell and thank-you dinner was held at the Oriental Hotel, which was the finest hotel in Dallas at that time. It was at that dinner that Rev. George W. Truett, the pastor of the First Baptist Church in Dallas (*Figure 10*), culmi-



Figure 11. Col. Christopher C. Slaughter (1837–1919).

nated the evening's events by saying, "Is it not now time to build a great humanitarian hospital, one to which men of all creeds and those of none may come with equal confidence?"

The next day, Col. Christopher Columbus Slaughter, a devout Baptist and a cattle baron who owned 600,000 acres of land, made the initial pledge (*Figure 11*). Col. Slaughter pledged \$25,000 and was urged by Rev. Truett to double that to \$50,000, to which he agreed. He also promised to match every other dollar that was contributed with \$2 out of his own pocket.

It took more than a year, but finally enough money was raised to begin building a new hospital. A groundbreaking ceremony was held on November 5, 1904, on the grounds of the Texas Baptist Memorial Sanitarium, i.e., the old Good Samaritan Hospital. For a few weeks, the old 25-bed hospital continued to be used as a teaching hospital, but because of the construction noise, dust, and other problems, it was soon closed as a treatment area and used solely as the residence for nurses and doctors who were in training.

The new Texas Baptist Memorial Sanitarium opened 5 years later on October 14, 1909 (*Figure 12*). The cost of construction was \$400,000. The new hospital was considered the best in the area for many years. It had 6 wards and 250 beds, with 114 of those beds in private rooms.

Other major events then entered the picture. The First World War started in 1914, and the USA entered the conflict in 1917. A hospital unit composed of Baylor nurses and orderlies went to France in early 1918. One of the doctors who also went to France was William Beall Carrell (1883–1944) (*Figure 13*). Dr. Carrell had received his medical degree in 1908 and practiced general surgery until he went to France in 1917—in advance of the Baylor unit. He was so impressed with the techniques he witnessed for the treatment of massive war trauma that he elected to spend some further time after the war in Liverpool, England, doing what we would now call a fellowship with one of the great English orthopaedic surgeons of the time, Sir Robert Jones. Dr. Carrell returned to Dallas in 1919 to become the first orthopaedic surgeon in Dallas. Two years later in 1921, with his associate Dr. Percy Girard, he established the Scottish Rite Hospital for the treatment of children with orthopaedic problems. Also, in 1921, the Texas Baptist Memorial Sanitarium was renamed Baylor Hospital.



Figure 12. The Texas Baptist Memorial Sanitarium in 1909.



Figure 13. Dr. William B. Carrell (1883–1944).

Dr. Carrell died in 1944, and his son, Dr. Brandon Carrell (1911–1981), became the chief at the Scottish Rite Hospital. Although the main problem at that time was polio, Scottish Rite Hospital treated any child with a musculoskeletal problem that required treatment.

Several major orthopaedic milestones occurred between 1920 and 1960. The first was the early development of arthroscopy by Dr. Eugen Bircher in Switzerland, who in 1920 was the first to routinely examine knees by endoscopy. The second was the beginning of the antibiotic era. In 1928, Dr. Alexander Fleming observed a mold called "penicillium," which inhibited bacterial growth. It was not until 1940 that "penicillin" was produced by Drs. Howard Florey and Ernest Chain and successfully used in World War II. In 1945, Fleming, Florey, and Chain shared the Nobel Prize in Medicine. The third major milestone occurred in 1955 when Dr. Jonas Salk developed the polio vaccine, and the fourth happened in 1960 when Sir John Charnley pioneered the artificial joint, using metal on plastic, to replace arthritic joints.

In the century from 1903 to 2003, the practice of orthopaedics changed dramatically. Osteomyelitis was almost eliminated by the discovery of antibiotics, and polio was virtually eliminated by the Salk vaccine. Congenital dysplasias were detected at birth by x-rays and treated in their early stages, and bone and joint tuberculosis was almost eliminated by the pasteurization of milk and the discovery of streptomycin. Arthroscopy led to an early and accurate diagnosis of joint conditions and the development of minimally invasive surgery.

In 2003, the new challenges that are seen in orthopaedics primarily involve trauma, which has been markedly increased by motor vehicle accidents, and osteoarthritis involving hips, knees, shoulders, back, and other joints. Osteoarthritis is becoming an increasing problem because people live longer and survive most serious traumas and illnesses. Total joint replacements and minimally invasive surgical procedures are perhaps the most common elective procedures performed today.

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What happened to Lorenz? Although he continued to work at his clinic in Vienna (*Figure 14*), he traveled a great deal and came to the USA for yearly visits. For several years, he conducted



Figure 14. Dr. Lorenz in his clinic in Vienna with visiting doctors. Reprinted with permission from reference 2.



Figure 15. Dr. Lorenz and his son Albert, an orthopaedic surgeon. Reprinted with permission from reference 2.

a clinic in New York with his eldest son, Albert, who also was an orthopaedic surgeon (*Figure 15*).

Professor Lorenz finally trimmed his long, flowing white beard on a trip to India in 1922 when he was 68 years old. In 1923, Lorenz was nominated for the Nobel Prize but apparently lost by one vote. He retired from active practice in 1924. Ironically, his

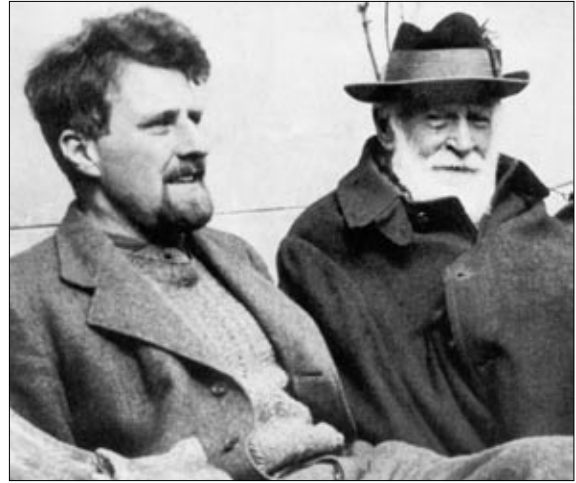


Figure 16. Dr. Lorenz and his son Konrad, who won the Nobel Prize in 1973. Reprinted with permission from reference 2.

second son, Konrad (*Figure 16*), won the Nobel Prize in 1973 for his work in ethology.

Adolf Lorenz, the catalyst for the development of Baylor University Medical Center, died in 1946 at the age of 92. Part of his legacy is the Baylor Health Care System, with 14 hospitals, 8 senior health centers, 14 affiliated ambulatory surgery centers, and approximately 2500 beds. The Department of Orthopaedics at Baylor is now recognized as one of the top orthopaedic centers in the country and is the busiest surgical service in the hospital. It is fitting that an orthopaedic surgeon was responsible for the hospital's creation.

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